Crabtree Notes
1970

THERMAL TREATMENT TESTING

Tests should be of Silica minerals encompassing considerable geography and diverse geological occurances these representing a variety of textures rangeing from the very glassy (obsidian, opal and Quartz crystal) to these quite granular but still have the properties of isotrophism (quartzites and basalts).

Samples to be large enough to saw 24, ~~one-inch-by-one-quarter-inch-thick~~ 1" X 1" X ¼" tabular pieces and still retain at least half of the original sample for control. One inch pieces will speed up testing time. althe some tests should be done with large pieces when control is stabelized. The samples of eachmineral should be homegeneous as there may be texture variations in the same piece of material. The range of tempatures should be from the first color change untill the final breakdown of the material.

ARTIFICIAL FRACTURE TESTING

1. Behavior of cone of force
2. Velocity of percussor as related to its weight
3. Inertia and support , fulcrum , fracture from end shock
4. Interval of contact between percussor and objective piece.
5. Downward force recording anglesprogressively note ing character changes of cone.
6. Outward force
7. Ratio of both downward and outward forces
8. Bi-directional forces
9. Surface character, (a) Natural etching
   (b) Artificial grinding with diverse sizes and kinds of abraisives.
   (c) Polished
   (d) Cortex
   (e) Freed Platform
   (f) Seared surface
10. Contact area of applied force.
11. Pressure
12. Percussion
13. Indirect percussion
14. Yeild of compression of material used for the application of force.
15. The amount of foot pounds of force to exceed the elastic limit of a definite area.
16. Size and type of platform as related to the area to be fractured without platform collapse.
17. Record of the angles of applied force.
18. Flake termination
19. Flake curvature
20. Flake truncation (a) Hinge
    (b) Step
    (c) Feathered
    (e) Over and behond Fr.(Otre Passe)

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ISOTROPHIC MINERAL TESTING OUTLINE AS RELATED TO LITHIC TECHNOLOGY PROBLEMS

Testing physical properties of Natural glasses and flintlike materials.

Compare range of tollerences and variation as well as devation from normal or ideal by machine and laboratory tests to find the limitation of the manual techniques, as practiced by the aboriginal.

1. Geological recent as opposed to minerals geologicaly old.
2. Fatigue caused by tempature fluctuations.
3. Internal stress due to diastrophism.
4. Stress due to molecular in balance.
5. Water content.
6. Permability.
7. Geological context of silica mineral deposits.
8. Source and nature of silica mineral, eg. chalk, limestone, impurities, assosated mineral salts and distinctive colora tion, any identification characteristics, micro fossils, crystal pockets , vugs, varves and ect.
9. Bonding agent of quartzites.
10. Elasticity , conduct tests.
11. Brittelness
12. Structural strength
13. Toughness
14. Properties and color changes produced by artificial heating.
15. Time study of heat treated mineral to revert to original texture.
16. Degree of vitreousness
17. Determine hardness by using Brinell scale, before and after heating.

Minerals with the properties of isotrophism usefull for making flaked stone tools.

Determine the set of geological circumstances that is pertent to a particular mineral., replacement of soluable minerals by silica impregnation of permiableminerals by solica, fault zones, vesicules, voids and cavities filled by layers of silica, eg. opal, quartz, silica gel, and residual clays and note the layer frequency.

Persons interested and have conducted experiments on the properties of Lithics. Francois Bordes, Jacques Tixier, Gorgen Melgaard, Meuler-Beck, Mayer-Oaks, Barbara Purdy, Aleric Faulkner, Ken Falash, Cynthia Irwin Wiliams.